

Syllabus

IT250: Introduction to Statistics Term 149

Credit Hours: 4

Prerequisites: MAT214

Course Description

Students taking this course will gain a knowledge of the theory underlying statistics and basic skills to collect, analyze and report data. The course also includes coverage of ethics in statistics highlighting new guidelines that have been established in industry.

Instructor Contact Information

Instructor Name	Gerard Arthus to enter text.
Instructor Email	garthus801@gmail.coenter text.
Instructor Phone	Home – 574-217-8726 Cell – 631-335-5350

Course Length

The college evaluates each course in terms of quarter hours of credit. One unit of credit is usually equivalent to a minimum of ten academic instruction hours of lecture and examination, twenty hours of skill development, or thirty hours of externship, or a combination of the three. An academic instructional hour is fifty minutes.

This class will meet for the equivalent of a minimum of 55 instructional hours or as otherwise scheduled by the college and at least in conformance with this minimum and the Syllabus. As specified by the Method of Instruction section of this Outline, the instructor will ensure that the total class sessions presented consist of a minimum of 33 direct faculty instruction hours and a maximum of 22 appropriate classroom activity hours.

All course offerings require outside preparation time, which is approximately two hours per lecture instructional hour and/or one hour per skill development instructional hour, depending on the background, interest, abilities, and motivation of the individual student.

Course Objectives

By the end of this course, you should be able to:

1. Distinguish between a population and a sample, and distinguish between a parameter and a statistic.
2. Describe the importance of sound sampling methods in general and the importance of a simple random sample in particular.
3. Summarize the distribution of data using histograms and frequency distributions. Construct graphs of data using scatter-plots, frequency polygons, dot-plots, stem-plots, bar graphs, Pareto charts or time-series graphs.
4. Calculates measure of center by finding the mean and median; calculate measures of variation by finding the standard deviation, variance and range; understand and interpret the standard deviation by using tools such as the range rule of thumb; compare data values by using z scores, quartiles or percentiles.
5. Understand the basic definitions and notation associated with probability.

Syllabus

6. Understand the concepts of probability distribution. Understand the normal probability distribution.
7. Understand the methods for using sample data to make inferences about a population.
8. Discuss the basic methods for testing claims about a population proportion, population mean, or population standard deviation (or variance).
9. Understand the basic components of a hypothesis test: null hypothesis, alternative hypothesis, test statistic, critical region, significance level, critical value, *P*-value, type I error and type II error.
10. Describe the methods for using two samples for making inferences about two populations.
11. Explain the two main activities of inferential statistics.
12. Understand the basic methods for finding a mathematical function that can be used to describe a nonlinear relationship between two variables.
13. Describe the applications of the χ^2 distribution to categorical data consisting of frequency counts.
14. Differentiate between the uses of the one-way analysis of variance and the two-way analysis of variance.
15. Discuss the different types of nonparametric tests and the constraints on their use.
16. Describe the methods used to monitor the changing pattern of data over time using run charts and control charts.
17. Discuss the importance of ethics to statistics and describe some of the ethical issues in statistics related to data collection, analysis and reporting.

Gradebook

A student's performance in this course will be evaluated using a variety of factors listed below. Instructors must use a minimum of three (**homework, tests, and a final exam are required**), and it is recommended that instructors use all five areas in your evaluation.

The exact weight to be given to any particular area is determined by the instructor and will normally fall within the ranges listed below.

Area	Percentage for this Course	Suggested Range
Final Exam	25%	20 – 25%
Tests	Click here to	20 – 40%
Homework	15%	10 – 15%
Project/Research Paper	20%	20 – 25%
Class Participation	10%	10 – 15%
TOTAL	100%	

Letter Grade	Points	Explanation
--------------	--------	-------------

Syllabus

A	94-100	Excellent
B	84-93	Above Average
C	74-83	Average
D	64-73	Below Average
F	63 & Below	Failure

Textbook & Instructional Material

Elementary Statistics, 12th Edition, Mario F. Triola, Pearson Publishing, 2014 including access to MyStatLab™

Teaching tools are available from the vendor on a CD ROM that includes a test bank and instructor's manual. These are also available online.

The instructor might utilize additional instructional materials as provided by the publisher.

Course Outline

Term: 149

Class Date: 19 September 2014 Chapter 1: <i>Introduction to Statistics</i>	Homework Due Date: Before the end of Next Week
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	Do the readings for this week found on the web-assist site. 4hrs. Review the videos and tutorials for this week found on the web-assist site 2hrs. Review the Power point Presentations for this week found on the web-assist site. 2hrs. Complete the Discussion forum found on the web-assist site for this week.
Class Date: 19 September 2014 Chapter 2: <i>Summarizing and Graphing</i>	Homework Due Date: ____
Lecture and do the quiz for this week found on the web-assist site.	Homework

Syllabus

Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 26 September 2014 Chapter 3: <i>Statistics for Describing, Exploring and Comparing Data</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 26 September 2014 Chapter 4: <i>Probability and Statistics</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 02 October 2014 Chapter 5: <i>Discrete Probability Distributions</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-</p>

Syllabus

	assist site for this week..
Class Date: 02 October 2014 Chapter 6: <i>Normal Probability Distributions</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 09 October 2014 Chapter 7: <i>Estimates and Sample Sizes</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 09 October 2014 Chapter 8: <i>Hypothesis Testing</i>	Homework Due Date: ____
In Class Activities	Homework
<p>Lecture and do the quiz for this week found on the web-assist site.</p> <p>Click here to enter text.</p>	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 16 October 2014 Chapter 9: <i>Inferences from Two Samples</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p>

Syllabus

	<p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 16 October 2014 Chapter 10: <i>Correlation and Regression</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 23 October 2014 Chapter 11: <i>Goodness-of-Fit and Contingency Tables</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 23 October 2014 Chapter 12: <i>Analysis of Variance</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 30 October 2014 Chapter 13: <i>Nonparametric Tests</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on	Do the readings for this week found on the web-assist

Syllabus

the web-assist site.	<p>site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 06 November 2014 Chapter 14: <i>Statistical Process Control</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>
Class Date: 14 November 2014 Chapter 15: <i>Ethics, Projects, Procedures and Perspectives</i>	Homework Due Date: ____
In Class Activities	Homework
Lecture and do the quiz for this week found on the web-assist site.	<p>Do the readings for this week found on the web-assist site. 4hrs.</p> <p>Review the videos and tutorials for this week found on the web-assist site 2hrs.</p> <p>Review the Power point Presentations for this week found on the web-assist site. 2hrs.</p> <p>Complete the Discussion forum found on the web-assist site for this week.</p>

This course has an in-class final exam. Final exam date: 20 November 2014

Additional Final Exam Information: There will be a final project and examination.

Method of Instruction

Instructional techniques must be appropriate, and at a collegiate level, to the specific goals and objectives cited above. Students and instructors must have a clear understanding of the goals and time requirements of this course, the nature of the course context, and method of evaluation.

This course has two distinct but related instructional phases. The first component constitutes a minimum of 33 direct faculty instruction hours. This component is the lecture series and provides instruction in theory, principles or practices of the course. The second component constitutes a maximum of 22 appropriate classroom activity hours. This component is the skill development

Syllabus

phase of the course and provides students the opportunity to apply knowledge gained in the lecture series. Method of instruction must fulfill the intended learner outcomes and competencies stated in the course goals and objectives and are appropriate to the capabilities of the students. For career oriented courses, the instructor must demonstrate that an effective relationship exists between curricular content and current practices in the field.

Additional Class Notes

Go to <http://www.openeducation.org/moodle> to use the Web-Assisted site for this course. Quizzes and discussion forums will be completed on-line at this site; and all other assignments will be uploaded there.